

## Chapter 2

# The Problem of Chronic Pain

### Demystifying Pain for Your Patients

Anyone who works in the medical field knows the toll chronic pain exerts on patients firsthand. Often when you first see a pain patient, he already has a long list of providers he has seen and treatments that have failed. (In this book we are using “he” when referring to patients for brevity, while obviously patients are both genders.) He often brings to the visit not only a long and discouraging narrative but an increasingly despondent emotional state. He may feel his pain is not being taken seriously, that no one is “listening” to him and that no one understands him. He may be nurturing resentments against employers and insurance companies if his pain resulted from an accident or injury and be harboring strong feelings of self-pity.

Many chronic pain patients have stopped working and limited their life activities out of fear that their pain will worsen—a fear which ironically makes pain worse as we will explore in subsequent chapters. They have become isolated and irritable and their family relations have become strained. Their eating and sleeping behaviors have often become dysfunctional and they may be catapulting toward depression, if they are not already clinically depressed. They have likely adopted verbal or non-verbal pain “behaviors” like sighing and grimacing which perpetuate the pain portrayal to others—and themselves. When you see such a patient, you often inherit the disappointing pain outcomes he has already endured and his increasing feelings of pessimism and skepticism.

Both patients and physicians are at a knowledge disadvantage when it comes to treating chronic pain. Pain patients often pursue a “cure” or quick “fix”/treatment for years, stubbornly resistant to changing their perspective or expectations. Ironically, it is only when they accept that a pure “cure” is not feasible and learn more about the complexities of pain that improvements will be seen.

Physicians, for their part, receive only a few hours of training about chronic pain and less than 4 % of US medical schools require a course in pain (Ochoa 2012).

**Table 2.1** Chronic pain facts

1. Chronic pain is seldom “cured” but can be managed effectively
2. Unlike nociceptive pain, chronic pain serves no clear biological “purpose”
3. We do not fully understand the cause of all patients with chronic pain
4. The existence of pain cannot be proved
5. There is little correlation between pain and disability or impairment
6. Chronic pain often confounds unimodal, symptomatic treatment
7. A multidisciplinary treatment approach to pain is frequently most effective

Consequently, many physicians neither fully understand pain nor enjoy treating chronic pain patients as opposed to acute pain patients who improve predictably. Certainly, we, as medical professionals, are trained to not be comfortable admitting we “don’t know” the etiology of condition or that we have limited ability to treat it. We are frustrated when we can’t help patients in the way we wish to help.

The truth is that medical science neither offers a full explanation of the development of chronic nonmalignant pain or how to eliminate it as we see in Table 2.1. We do not recognize any biological purpose it serves and we cannot identify clear correlations between pain and disability, despite patients who clearly appear to be in pain and are often not working or leading functional lives.

Nor is chronic pain the public health priority it should be. Over 100 million Americans experience chronic pain and its treatment costs the US\$635 billion a year—compared with heart disease (\$309 billion), cancer (\$243 billion), and diabetes (\$188 billion) (Institute of Medicine 2011). Chronic pain represents \$11.6–\$12.7 billion a year in lost work days in the United States with many workers not returning at all. Yet, of the 27 institutes in the National Institutes of Health (NIH) not one is dedicated to pain.

### ***Two Different Roads to Pain Management***

We have all heard that there are many “different roads to Rome.” Similarly, there are many roads to managing pain and most pain patients you will see are on the undesirable “road” of narcotics, injections, surgery, rest from activity, disability, anticipatory fear, activity avoidance, and excessive focusing on their pain, often with the encouragement of their family. When people when they think of a “road less traveled” many remember the beautiful poem by Robert Frost, called *The Road Not Taken* on the topic, and pictured in Fig. 2.1 (2002)

Acknowledge that you believe the patient's pain is real
Ascertain the patient's previous treatments, experience and "pain story"
Help the patient see his pain is affected by body, mind and social/situational factors
Connect the patient with others on a multidisciplinary team who can help
Convey that a new "path" exists for pain management that requires a new attitude
Enlist the patient as a member and mutual decision maker on the treatment team

**Fig. 2.1** Getting started with a pain patient

### The Road Not Taken

By Robert Frost

Two roads diverged in a yellow wood,  
 And sorry I could not travel both  
 And be one traveler, long I stood  
 And looked down one as far as I could  
 To where it bent in the undergrowth;

Then took the other, as just as fair,  
 And having perhaps the better claim,  
 Because it was grassy and wanted wear;  
 Though as for that the passing there  
 Had worn them really about the same,

And both that morning equally lay  
 In leaves no step had trodden black.  
 Oh, I kept the first for another day!  
 Yet knowing how way leads on to way,  
 I doubted if I should ever come back.

I shall be telling this with a sigh  
 Somewhere ages and ages hence:  
 Two roads diverged in a wood, and I—  
 I took the one less traveled by,  
 And that has made all the difference. (2002 Owl)

But too often this “road” is characterized by uncoordinated medical care and unimodal treatments that are not evidence-based as we see in Table 2.2. In fact, despite today’s arsenal of popular new pain treatments, the incidence of adults who report chronic pain has grown from 50 million a few decades ago to 100 million (Wells-Federman 1999; American Academy of Pain Medicine 2011). Clearly, this road is not working.

The multidisciplinary pain rehabilitation road is less traveled but infinitely more effective. It involves elimination of narcotics (which are seldom useful in chronic pain), identification of appropriate medication(s), addressing the patient’s psychological, social and emotional issues and educating the patient about pain and pain management. Rather than the “cure” for chronic pain which patients have sought in surgery or medications, the multidisciplinary road offers them a “cafeteria” of treat-

**Table 2.2** Signs of ineffective pain management

1. Narcotic use without increased function
2. Repeated injections
3. Repeated surgery
4. Rest instead of activity
5. Disability
6. Fear of pain and activities
7. Focus on pain
8. Worsening mood—depression, anger, helplessness, hopelessness

ments from different disciplines. These include different medications such as antidepressants and antiseizure drugs, education and empowerment, physical therapy such as stretching, self-mobilization and aerobic exercises, strengthening and endurance building and Transcutaneous Electrical Nerve Stimulation (TENS) or cognitive and behavioral techniques like altering thought patterns, distraction and mental imagery.

The goal of multidisciplinary pain rehabilitation is to induce in the patient a sense of self-efficacy and self-responsibility as a partner in his own pain management

The goal of multidisciplinary pain rehabilitation is to induce in the patient a sense of self-efficacy and self-responsibility as a partner in his own pain management. This happens as the patient is taught how to increase activities at work or home without fear or strain and how to achieve a new perspective of his pain and life through working with a psychologist, when needed. As patients are empowered by members of the multidisciplinary team, they learn self-management and are able to control their pain instead of having it “control” them. Often there is an “aha” moment or a Gestalt in which the patient realizes that recovery is up to him and he participates in the treatment in a new way.

Of course treating chronic pain with a multidisciplinary rather than traditional approach is not without controversy. There are also intense philosophical conflicts regarding the treatment of chronic pain which we will explore in this book.

### ***Chronic Pain Is a Biopsychosocial Process***

Many trace the multidisciplinary team concept to Tacoma General Hospital where John Bonica, an anesthesiologist, and his colleagues recognized that chronic pain patients needed more than a physician to improve their function in the 1940s. Dr. Bonica recruited a group consisting of John D. Loeser, M.D., a neurosurgeon,

**Table 2.3** Distinguishing features of multidisciplinary approach

<b>Conventional</b>	<b>Multidisciplinary</b>
Pain relief	Functional improvement
Peripheral treatment	Central and peripheral treatment
Opioid drugs	Minimal or no opioid drugs
Surgery	Minimally invasive procedures
Unimodal treatment	Multimodal rehabilitation
Patient care	Patient responsibility
Passive care	Active participation
Expensive, non-EMB care	Cost-effective, EBM care

Wilbert Fordyce, Ph.D., a psychologist, a physiatrist, and physical and occupational therapists and sought to develop a biopsychosocial model of pain management (IASP 2012). Interestingly, the new approach focused on improving function as opposed to eliminating pain.

Treating a patient with a team of professionals including the patient himself and ideally the patient’s family has two salutary results. It produces *coordinated* care in which the “left hand knows what the right hand is doing” (a feature that is seriously lacking in our healthcare system) and it enfold the patient in decision-making process. The key differences between conventional and multidisciplinary treatment are shown in Table 2.3.

### ***Let the Patient Drive the Bus***

“A treatment that is simply handed to a patient without his or her input...is less likely to work or be adhered to,” says Scott M. Fishman, M.D. one of the nation’s leading pain experts and author of several pain texts (Fishman 2012a, b, p. 67). “Patients are best served by being put in the role of chief executive officer of their treatment regimens,” he writes.

When first instituted, pain programs with multidisciplinary teams flourished in the United States. Teams could include physical and occupational therapists, exercise physiologists, rehabilitation nurses, social workers, vocational therapists, therapeutic recreation therapists, ergonomics specialists, dieticians, pharmacists, and even members of the clergy. The multidisciplinary pain programs, also called interdisciplinary programs, were a good example of holistic medicine—treating the person not just the symptoms. They exemplified a biopsychosocial approach to health in which the body and the brain are acknowledged to be interconnected and work together. But sadly, due to a shifting healthcare reimbursement environment, multidisciplinary pain programs are disappearing in United States even as their popularity grows in the rest of the world.

John D. Loeser, M.D. one of Dr. Bonica’s original team members and considered a leader in the multidisciplinary pain approach today in the United States, has

**Table 2.4** Chronic pain precepts in multidisciplinary care

1. Chronic pain must be viewed as a mind/body, and biopsychosocial and cultural occurrence
2. Chronic pain cannot be treated like acute pain with passive rest and modalities
3. Patients must understand what “hurts” them does not necessarily “harm” them
4. Patients who become active participants in their treatments generally improve

lamented how multidisciplinary rehabilitation in the United States is disappearing due to overreliance on narcotic pain killers. “This often occurs with little or no attempt to assess patients’ real needs, as if chronic pain were a purely medical problem and psychological and social factors of no account,” he said in the International Association for the Study of Pain’s magazine *Insight* (2013). Four key precepts of multidisciplinary treatment are seen in Table 2.4.

### ***The Pain Management Pendulum Has Swung Back***

It is noteworthy that before the idea of a multidisciplinary team developed, chronic pain was regarded as a purely medical problem—and the pendulum has swung back. Then and now, treatment is too often focused on masking the pain with anti-anxiety drugs, narcotic pain drugs, injections and surgery without probing emotional and cultural factors—literally “treating the pain and not the patient.” Treatments like spinal fusions and disk surgery, spinal cord stimulators, steroid and painkiller injections, nerve ablation, and of course long-term prescription of narcotics have become the norm in pain care, especially in the United States. At the same time, the incidence of adults who report chronic pain has doubled. Clearly, the newer methods are not working.

It should be no surprise that changes in the way health care is delivered and reimbursed are at the heart of these changes. Chronic pain treatment in the United States is increasingly “dictated by what insurance providers will pay for rather than by individual patient needs,” and, at best, such treatment is “inappropriate, and at worst is dangerous,” maintains Dr. Loeser, who is Professor Emeritus, of neurological surgery, anesthesiology and pain medicine at the University of Washington. “Health professionals, not insurance providers or managers and politicians, must once again be in charge of medical planning and decision making.”

Lynn Webster, M.D., former president of the American Academy of Pain Medicine (AAPM) agrees. “All payers should offer a comprehensive, interdisciplinary pain program to patients who have disabling pain,” wrote Dr. Webster in an article titled, “We Have an Epidemic on Our Hands and the Status Quo Is Failing Us” in *Pain Medicine News* (Webster 2013). “In addition, all payers should make available cognitive behavioral therapy to people with chronic pain. At minimum, these benefits should be similar to the 2008 federal law mandating parity for mental health treatment.” I strongly agree with his Dr. Webster’s statement.

In addition to inappropriate and uncoordinated care, current pain care also emphasizes short-term savings at the price of long-term results, writes Barry Meier, a *New York Times* reporter. “In the short run, treating a patient with an opioid like OxyContin, which costs about \$6000 a year, is less expensive than putting a patient through a pain-treatment program that emphasizes physical therapy and behavior modification,” but over time multidisciplinary programs “might yield far lower costs,” he observes.

An average worker compensation claim without opioids, for example, is \$13,000 but leaps to \$39,000 when short-acting opioids are added and \$117,000 when long-acting opioids are added (Meier 2013). According to a study by the California Workers’ Compensation Institute, workers who received high opioid doses stayed out of work *three times longer* than those who took lower doses, “What we see is an association between the greater use of opioids and delayed recovery from workplace injuries,” explained Alex Swedlow, head of research at the Institute (Meier 2013).

A 2008 study in the journal *Spine* found people kept on opioids for more than 7 days during the first 6 weeks after an injury were more than *twice as likely to be disabled and out of work a year later* (Fauber and Gabler 2012). A study of 300,000 Workers’ Compensation claims by the Workers Compensation Research Institute found pain and day-to-day function do not improve in workers when they stay on opioids (Fauber 2012).

Multidisciplinary pain rehabilitation, on the other hand, is effective for pain patients and cost-effective for providers according to medical literature. The “multidisciplinary treatment ameliorates pain, functional restoration, and quality of life with medium to high-effect sizes even for patients with a long history of chronic back pain,” says a paper in the *Journal of Clinical Rheumatology* (Moradi et al. 2012). “Results demonstrate that participation in a [multidisciplinary] chronic pain program is an effective intervention for selected patients with refractory pain,” echoes a study in *Pain Physician* (McAllister et al. 2005). “Primary care-based treatment of chronic pain by interdisciplinary teams (including behavioral specialists, nurse case managers, physical therapists, and pharmacists) is one of the most effective approaches for improving outcomes and managing costs,” concluded an article in *Translational Behavioral Medicine* (Debar et al. 2012).

In Denmark, implementation of clinics with multidisciplinary teams cut the rate of lumbar disk surgery in half in just 4 years. (Rasmussen et al. 2005). Before the team-based clinics, patients with low back pain (LBP) were “referred unsystematically to various diagnostic methods,” write the authors in a 2005 article in *Spine* and there was a “high degree of uncertainty about both diagnosis and prognosis.” After the multidisciplinary nonsurgical spine clinics were in operation, patients benefited from a faster and more “competent evaluation,” an education program geared to general physicians that stressed “the benefits of a more conservative approach” and a “local media campaign stressing the concept of ‘watchful waiting.’”

**Table 2.5** The six ways of treating chronic pain

1. Pharmaceutical (painkillers, antidepressants, antiseizure drugs)
2. Interventional (injections, nerve blocks, neuromodulation)
3. Surgically (to eliminate or stabilize)
4. Physical modalities (physical therapy, acupuncture, etc.)
5. Psychological (cognitive behavioral, relaxation therapy)
6. A combination of all the above

### *Remembering the Words of Hippocrates*

There are six ways to treat chronic pain as seen in Table 2.5. The first three—drugs, interventions (injections, nerve block, spinal cord stimulators, and Intrathecal drug delivery systems) and surgery—are seen together. But they are seldom blended with psychological treatment and a multidisciplinary approach. It is ironic and unfortunate that when most patients think of pain treatments, they think of an individual modality like injections and seldom about a combination of therapies to get the right “blend.”

Worse, both patients and physicians have embraced expensive and high-tech pain treatments which are not evidence-based, as we will address in subsequent chapters.

Almost from the first day of medical school, physicians learn two sayings from the father of medicine, Hippocrates: “First, do no harm” and “comfort always.” Clearly medical professionals need to ensure that “bad things” that may need surgery or acute treatment are addressed promptly while allowing “nature” to take care of self-limiting conditions. Those conditions like most muscle strains and sprains, and minor fractures will heal with appropriate time and medications, support, or heat or cold to make the patient more comfortable in his recovery process.

### *The Dangers of the “X-ray Diagnosis”*

Unfortunately, the phenomenon of readily accessible X-rays and other imaging technologies has increased our capacity to, unwittingly, “do harm” through dispensing poor prognoses, diagnostic labels, and misattributing pain symptoms. In almost all cases, abnormalities and age-related changes shown on X-rays and MRIs are not the source of the patient’s pain. Yet, 75 % of patients over 50 are told they have “thinning of the discs” and 60 % of patients as young as 30 are told they have “arthritis” on the basis of X-rays and MRI scans. This misattribution can be disturbing and harmful to patients and lead to treatments they may not need.

The truth is the so-called “arthritis,” disk “thinning,” “degenerative disk disease” and a “bulging” disk are usually as predictable and expected as graying hair; a natural part of aging and not a medical problem. We certainly don’t call gray hair “follicular depigmentation syndrome” and treat it aggressively.

These diagnoses can be terrifying and take on the power of urban legends writes David Hanscom, M.D. in *Back in Control* (2012). “I recall one sixty-year-old gentleman I saw many years ago who’d been experiencing back pain for about eight weeks. He was terrified because he’d been told he had degenerated disks. He feared paralysis and loss of function,” writes Dr. Hanscom. “I explained to him in detail that his spine was *completely* normal for his age. As I pointed out earlier....there is no correlation between degenerated disks and back pain.”

Surgeons tend to believe that if a structural “pain generator” can be identified, the “pain will resolve,” writes Dr. Hanscom. While on the surface this seems plausible, in point of fact “physicians can make an exact diagnosis of the source of lower back pain only about fifteen percent of the time (2012, p. 3).”

Often what is identified on the scan as the pain generator is not the source of the patient’s pain—and would not have caused pain if its presence weren’t known. In low back pain (LBP) sufferers, 90 % of X-rays or MRIs show no specific structural abnormalities, nor do nerve tests or neurological examinations pinpoint the pain source. Moreover, from 40 to 60 % of asymptomatic patients show abnormal X-ray changes when imagery is done for other reasons.

When interpreting an X-ray, medical professionals should first assure a patient that there is no evidence of fracture, tumors/cancer or progressive instability before discussing any middle-age-related arthritis which is revealed (and is likely not the source of the patient’s pain). Many current treatment guidelines strongly suggest refraining from X-rays for at least for 4–6 weeks after a episode of acute back or neck pain for this reason—to avoid conferring an upsetting “X-ray diagnosis” upon a patient that may not have relevance to a pain condition.

Early or unnecessary imaging has been linked to unwanted outcomes in the medical literature. “Excessive use of spine imaging may contribute to the problem” of unneeded or excessive surgery noted a paper in the *European Spine Journal*, “along with unrealistic patient expectations, a desire to validate disability claims, or wishful thinking on the part of both doctors and patients.” “Early MRI may lead to greater subsequent interventions, potentially poorer outcomes, and increased health care expenditures,” echoes a paper in the journal *Spine*. Sadly, there may be “financial incentives for hospitals, surgeons, and device manufacturers” to overuse MRIs observes the *European Spine Journal* and Reuters has found that MRIs are ordered more frequently when health care providers have a financial stake in the imaging center or the equipment used.

Nortin Hadler, M.D., Attending Rheumatologist at the University of North Carolina Hospitals and author of *Worried Sick* (2008) and *Stabbed in the Back: Confronting Back Pain in an Overtreated Society* (2009), writes that “billions of dollars are spent annually in the pointless exercise” of unnecessary diagnostic scans (2009).

“Who among us can look at an image of our own spine and not feel disquiet as we come to realize how many disks have degenerated, how many facet joints have spurs, how peculiar is the alignment? What has gone wrong? What will happen to me? What did I do? What should I avoid?” he writes. “Given the common horror of disease, these queries and the accompanying angst are predictable. We all need to be disabused.”

Jerome Groopman, M.D., Professor of Medicine at Harvard Medical School, Chief of Experimental Medicine at Beth Israel Deaconess Medical Center and author of *How Doctors Think* (2007) voices similar reservations, especially about the ability of X-rays to “generate false positives” and for “normal structures” to be labeled “abnormal.” Dr. Groopman quotes E. James Potchen, M.D., of Michigan State University who has studied X-ray reliability warning medical professionals that, “if you look at a film too long, you increase the risk of hurting the patient (p. 180).

### *Acute Versus Chronic Pain Treatment*

We medical professionals excel at treating acute conditions like a broken leg, chest pain, appendicitis or infection that have clear explanations and protocols.

Chronic conditions, on the other hand, like diabetes mellitus, hypertension, asthma, Parkinson’s disease, migraine headaches and, of course, chronic pain usually have no specific “cause” or “cure” and do not resolve predictably like acute conditions do, with time and treatment. Even when chronic conditions *do* have a clear “cause” such as post-herpetic neuralgia from shingles, there is still seldom a “cure” we can offer patients. While we know the nerves in these patients have been “rewired” due to chemical, physiological and even anatomical changes which result in the burning and shooting pains they report, we can generally manage these over-active nerves rather than “cure” them.

Over 40 years ago, the medical field recognized that managing chronic pain is not only different from managing acute pain, the treatment for the two kinds of pain are polar opposites. While rest is recommended for acute pain, chronic pain requires activity. While narcotics and passive therapies like injections, multiple surgeries, chiropractic and opioid medications are appropriate for acute pain, they are not appropriate in chronic pain. In some select chronic pain patients, narcotic pain medications may improve quality of life, when used according to established guidelines established by the Federation of State Medical Boards but usually, when used long-term, they worsen pain and can lead to drug dependence and addiction (Fishman 2012a, b, 2014).

There is another difference in the treatment of acute versus chronic pain and it is a philosophical one. In acute pain, the patient is treated with passive modalities that do not require his participation—“nature” does the healing. In chronic pain management, on the other hand, the patient *has* to become an active participant in the care for improvement to result. When a chronic pain patient is *not* an active participant

**Table 2.6** Many chronic pain patients exhibit these “Ds”

Dramatic verbal/nonverbal pain behaviors
Disability out of proportion to medical findings
Disuse of an extremity
Dysfunction of the body part and social roles
Depression—anger, hopelessness
Deconditioning
Discouragement
Despair
Drug abuse—especially with opioids/narcotics
Dependency on family; healthcare system

in his care, he usually develops a condition characterized by many Ds: Dramatic pain behaviors, Disability conviction, Disuse of an extremity, Dysfunction, Depression, Deconditioning, Discouragement, Despair, Drug abuse, and, above all, Dependency on family and the healthcare system. Most of us have seen the “Ds” firsthand in our offices, as shown in Table 2.6.

One of the best things you can do for your chronic patient is to clearly explain the difference between “hurt” and “harm.” The “hurt” he is experiencing does not signify *harm* to his bones, joints and overall wellbeing and *the more active he is, the less pain he will feel*. This counterintuitive principle governs much of chronic pain treatment which exhorts patients to override their own protective impulses. Many and possibly most chronic pain patients develop *anticipatory fear of activities* they think will provoke their pain and become inactive. They fear and resist exercise though it will usually improve their pain through strengthening their muscles, reducing their mental stress and releasing endorphins. Exercise will also give patients self-efficacy, decrease *catastrophizing thoughts* and enable them to witness their own progress.

ALL THINGS ARE DIFFICULT BEFORE THEY ARE EASY

A few years ago, research was presented at a meeting of the American Academy of Pain Medicine that revealed how potent a force fear can be in pain patients. In a study conducted at Stanford University, Sean Mackey, M.D., Ph.D., Chief of the Pain Management found that “Those who had more fear during an acute low back pain episode were much more likely to ultimately overpredict the amount of pain they had, which ultimately led to significant increase in fear-avoidance behaviors, with subsequent worsening of symptoms, increase in duration of pain, and increase in disability (Frieden 2011).”

Dr. Mackey told participants that “catastrophizing has been found to be seven times more powerful than any other predictor in predicting the transition from acute to chronic pain.”

For this reason, patients who have sustained injuries should be encouraged to return to their daily activities early, during the acute phase of healing, especially when X-rays show there are no fractures or serious problems. If acute pain is not properly managed or explained, patients can start to dwell on their pain which can often begin the path to chronic pain conditions. Medical professionals and the healthcare system in general can encourage this path through “enabling”—lenient time off work, kind attention, narcotics, and completing disability forms that provide financial remuneration. In countries in which there are not big financial settlements after accidents, recovery from chronic pain is often more swift and complete.

Clearly medical professionals who “baby” their patients by prescribing excessive rest, time off from work and “narcotics for pain” are not serving their long-term recovery or empowering them through helping them learn to control their pain and increase functioning at home and work.

### ***Getting Started with a Pain Patient***

Because pain is, by definition, subjective and can’t be “proved,” patients with chronic pain can suffer issues of “verifiability.” They may feel that their pain is not being taken seriously by practitioners and even that they are suspecting of feigning pain for secondary gain, if litigation or worker compensation cases are ongoing. As medical professionals, it is not our job to judge the existence of pain—but to identify specific diagnoses and treatments and to gain a sense of the patient’s narrative. Using a multidisciplinary approach facilitates acknowledging and *treating the “whole person” and not just “the pain.”*

There is another way that chronic pain patients can feel ill-served by medical professionals. We know that pain is mediated by physiological pathways related to emotion, as well as, affected by cultural, vocational, and social factors. Unfortunately, patients can take this to mean that we think their pain is imaginary. When we tell them that their pain messages are linked to brain processes and emotional states, they can take this to mean the pain is somehow “in their head.”

Ever since the publication of Ronald Melzack’s *Gate Control Theory of Pain* in 1965, biomedical research has explored and confirmed the complex web of emotional, mental and cognitive processes behind the experience of pain. Dr. Melzack’s groundbreaking Gate Theory and the other major pain theories are explored in depth in Chap. 3 of this book.

Studies have shown actual changes on functional MRI scans caused when cognitive modifications pertaining to pain were induced. When patients were prompted to view their pain in terms like “terrible,” “horrible,” and “incurable,” the brain activity in their prefrontal cortex, a brain area that controls emotion and is linked to pain, increased. When the patients were instructed to pursue calm and pleasant thoughts through

mind/body techniques, decreased pain activity was noted. Studies published on postoperative pain have shown that individuals who are more optimistic about their lives and the prospect of pain enjoy a better recovery and higher quality of life.

It is often human nature to “think the worst” and chronic pain patients are especially known to “catastrophize” their pain. Catastrophizing makes your patients’ pain worse in two ways—it increases pain through *anticipation* of it and it limits activities that would distract them from their pain, causing them to focus on it more.

Focusing on pain also encourages patients to exhibit what are known as “pain behaviors” like verbal statements of pain or nonverbal pain behaviors like sighing, groaning, limping and grimacing. Just as research has revealed “acting happy” can produce feelings of happiness, enacting pain behaviors usually makes a patient feel worse. Pain behaviors *also invoke sympathy from family and caregivers which similarly can perpetuate the pain and disability “conviction.”*

Because they are living intimately with a patient, family members are ideally included in treatment conferences as co-decision makers with valuable perspectives to offer. Family members exert major impacts on pain recovery. If they are focused on medicolegal aspects and specifically the hope of monetary settlements, a patient’s pain behaviors can often be reinforced. When a family waits on a patient and excuses him of his household duties after weeks or months, it also reinforces the pain. However, if family members minimize or downplay a patient’s pain, that is not an ideal situation either because feelings of self-pity and victimhood can be aroused. Notably, prescribing opioid painkillers can also perpetuate the patient and family’s pain conviction by underscoring the belief that the pain must be considerable if it warrants opioid drugs.

### ***The Brain/Pain Connection***

Forgiveness does *not* change the past *but* it enlarges the future.  
Patients should not focus on past mistreatment and anger at the doctors, employers, or insurers but *forgive*.

Like fear, anger has an augmentative effect on pain. If a patient’s pain occurred due to someone else’s fault such as in a motor vehicle accident or a work injury, he often harbors anger and even feelings of victimhood. “I was minding my business and look what happened to me,” patients can intone to themselves over and over. If he is immersed in the medicolegal system, these emotions can be compounded if there are intense disagreements between insurance company doctors and his treating physician. Certainly insurance companies and attorneys are dedicated to the bottom line, not a patient’s wellbeing which, unfortunately, adds to the volatility of the situation.

In addition to anger at their families and caregivers, chronic pain patients are often angry at their physicians and therapists, employers, and worker compensation authorities and insurance companies, who they feel are not helping the situation or making it worse. They can also be angry at *themselves* entertaining self-blaming thoughts like, “I should never have had that surgery” or “Why didn’t I obtain a second opinion?”

While the convictions a patient holds about his pain, its causes and its prognosis, can add to his pain experience, these thoughts, sometimes called “self-talk,” can also be controlled. Many patients can benefit from a method of self-inquiry like that developed by an American speaker and author Byron Katie, known for *The Work* (Katie 2014). She suggests four questions for people to pose when they are confronted with thoughts that cause them anger, fear, depression and addiction. (1) Is it true? (Yes or no. If no, move to (3)), (2) Can you absolutely know that it’s true? (Yes or no), (3) How do you react emotionally, when you believe that thought?, and (4) Who would you be and what feelings would you have without the thought?

### **Questions to Apply to a Disturbing Thought**

1. Is it true? (Yes or no. If no, move to (3))
2. Can you absolutely know that it’s true? (Yes or no.)
3. How do you react, what happens, when you believe that thought?
4. Who would you be without the thought?

Byron Katie  
The Work

There is also a strong relationship between pain and depression. Between 30 and 65 % of patients with chronic pain also have depression and studies have shown that patients who have depression and anxiety in addition to their pain, are 2–5 times more likely to develop chronic pain 1–8 years down the line (Frieden 2011). Sometimes, treating the underlying anxiety and depression can improve the patient’s pain through the varied skills of the full multidisciplinary team. We will address emotion and mental factors involved in chronic pain more fully in Chap. 4 about Cognitive Behavioral treatments and Chap. 5, Treating the Chronic Pain Patient.

Even though a patient may have a clear “pain generator” causing nociceptive pain due to specific injury or medical condition such as recent back surgery or nerve damage, anxiety, depression and stress will frequently exacerbate the pain. The stressors of losing a job, mobility, independence and financial security can have profound effects on a patient’s health in addition to the pain itself. Stress provokes the hypothalamic-pituitary-adrenocortical axis and hypothalamus to secrete cortisol and the sympathetic nervous system too increases the heart rate and stimulates the adrenal glands.

Stress often generates behavioral changes in a patient like increased smoking and drinking, increased or decreased sleep and decreased exercise and activities. It affects liver function, muscle tension, and the metabolism of food, facilitating weight gain.

Stress also leads to high levels of inflammation in the body and impairs the immune system itself—inviting more health problems.

Finally, several studies have identified traumatic and abusive events in the pasts of chronic pain patients which are triggered by the experience of pain as adults and add to their chronic pain situation (Finestone 2009).

### ***Toward a New Attitude***

Whether angry, stressed, resentful, fearful, self-critical, self-pitying or depressed, patients with chronic pain often benefit from a multidisciplinary approach that addresses both body and mind. Disappointed by months of ineffective treatments, they are often open to a new approach and willing to consider the idea, for the first time, that their pain will never be “cured” but can be managed in a way that they can still enjoy a high quality of life. Several books like *The Promise: Never Have Another Negative Thought Again* by Graham Price (Price 2013) chronicle this acceptance process which Price calls “pacceptance” for positive acceptance.

Many chronic pain patients, when they accept their pain, describe their ability to live successful lives despite recurrent or chronic pain as “the pain is no longer controlling me; I am controlling the pain.” Sometimes an attitude shifts from “I am a pain patient who can do only a few things,” to “I am a person who can do most things despite occasional pain.” The change amounts to a Gestalt in their thinking; the patient has ceased “fighting” and accepted his condition in a new way.

Often the process of acceptance begins when a patient realizes, sometimes for the first time, that his pain and situation are no one’s particular “fault.” This allows built up anger to be redirected toward the positive motivation to improve and rebuild their lives. Even when a patient may not return to his former employment, pain patients can often identify new strengths and interests and their new lives can wind up preferable to their “pre-chronic pain lives.” One of my patients was able to use his “season of suffering” with chronic pain to gain the training to become a health educator at the university level. Many pain patients are able to bring renewed affection to their families, especially spouses and children, when they reach a level of acceptance.

Only if you have been in the deepest valley, can you ever know how magnificent it is to be on the highest mountain.

Richard M. Nixon

While chronic pain patients who have not accepted their situation are very focused on “four-letter words” like “can’t,” “fear,” and of course “pain,” when they work with a multidisciplinary team and are educated in the mystery of pain, and techniques of self-management and self-efficacy, we often see a new word surfacing in their life: hope. I have discussed these issues in detail in my previous book, *Pain: A Four Letter Word You Can Live With—Understanding and controlling your pain* (Vasudevan 1995).

Even though it has been over 20 years since it was published, the principles in the book are true today.

In caring for patients with chronic pain for almost 40 years, I have been awed to see patients who were disabled by pain and dependent on narcotics and the health-care system change into vibrant, active people no longer debilitated by pain over a course of a short period of time. The main ingredient in these dramatic transformations is actually a *mixture* of all the ingredients found in multidisciplinary treatment including physical and psychological therapies, appropriate medications, education and the encouragement of a positive attitude of participation.

In her book *Positivity* Dr. Barbara L. Fredrickson (2009) describes such a change in attitude as a “tipping point,” and uses the example of solid and rigid ice becoming flexible and flowing water under the right circumstances. Dr. Fredrickson notes that positive people tend to be healthier, happier and feel they have more control over their lives. Significantly, Dr. Fredrickson believes the quality of positivity can be learned.

The importance of positivity and living in the “now” is a theme that philosophers have addressed through the centuries. “If you are depressed you are living in the past; If you are anxious you are living in the future but if you are at peace you are living in the present,” is an aphorism attributed to Lao Tzu. A more contemporary version of the thought is something I often say to my patients: “The past is history; the future is a mystery but today is a gift—that is why it is called the present.”

There are many valuable books which seek to help patients uncover the spiritual aspects of their pain conditions often by modifying their attitudes and seeking “mindfulness.” In spiritual communities such as Buddhist monasteries, mindfulness begins with the elimination of destructive thinking habits which produce stress and “striving” for an alert awareness and consciousness of thoughts and circumstances. For pain patients, being “mindful” translates into noting their own responses to pain and seeking to *choose* an attitude rather than have the pain control them.

In writing about the process in *A Mindfulness-Based Stress Reduction Workbook*, Bob Stahl, Ph.D. (Stahl 2010) declares that everyone has a choice in how to respond to situations. *If we are not aware we have a choice, we are often reenacting, old habitual patterns that may not really serve our health or wellbeing*, he suggests.

In his book, *Lead the Field*, Earl Nightingale (2002) emphasizes that positive attitude naturally translates into positive goal settings which lead to “true joy and satisfaction.” He recounts an anecdote about a father who was trying to watch a football game while his young son frequently interrupted him. To keep the son busy, the father takes a newspaper with a photograph of the earth on it and tears the page into several pieces and throws it on the ground. Put “the world” back together, he suggests to his son, thinking it an impossible task and will keep the boy busy. Within a few minutes, the son has reconstructed the newspaper and returns to show it to his father. The father is rather amazed and asks the son how he accomplished it. The son replies, “On the back of the picture, there was a picture of a man and I put the man together and the world was put back together.”

Impossible—It Is  
Just an opinion

## ***Empowering the Pain Patient***

The recovery of patients with chronic pain is often like that of alcoholics and addicts who, after proper interventions, can maintain their sobriety through supportive peer groups, family support and a commitment to a new attitude. The alcoholic will always be an alcoholic just like the chronic pain patient will always experience some pain. But both can choose their actions in light of their condition. Just as an alcoholic can choose to become a non-practicing alcoholic, a pain patient can choose to reject capitulation to pain and self-pity and apply what he has learned about his condition to good use and a productive life. It referring to the irreversibility of alcoholism, it is facetiously said in self-help groups, you can turn a cucumber into a pickle, but you cannot turn the pickle back into a cucumber. Still “you can be a great pickle.” The same bittersweet observation applies to chronic pain patients.

Just as non-drinking alcoholics learn how to cope with the “triggers” that in the past made them want to pour a drink, pain patients can learn appropriate psychological techniques to “turn down the volume” of their pain and decrease their attention to it. In the Cognitive Behavioral approaches you will learn in Chap. 4, you can assist your patients in learning relaxation techniques and other mechanisms based on understanding their pain, using rational thinking about the pain and problem solving.

For example, when a chronic pain patient is having a flare up of pain he can say to himself, *I feel* like going to the emergency room—but I *know* that all I will get is more X-rays and more medication and it will not get to the source of my pain, because it never has!” This is what alcoholics would call “thinking through the drink.” Instead, the pain patient uses self-management techniques he has learned that have worked in the past such as heat, muscle relaxation, and mental techniques. In this way, the chronic pain patient “resists” giving in to his pain the way an alcoholic resists taking a drink.

There is another concept in self-help groups for alcoholics which is to try the new approach and if it doesn’t work “your misery will be refunded.” Certainly most pain patients would not want their disability, dysfunction, drug misuse, and deconditioning “refunded.” Nor will most pain patients fail to appreciate that insanity is “doing the same thing over and over again and expecting different results.” More than most patients medical professionals see, pain patients realize if they keep doing what they have been doing, they will keep “getting what they have been getting.”

This tipping point in which a pain patient has a new attitude of acceptance and positivity does not happen in a vacuum. It is the result of appropriate education, supportive staff, multidisciplinary specialists, supportive family and the patient’s willingness and self-motivation to leave behind a life of dependency on the health-care system and drugs for a more functional lifestyle. The patient who was seeking a cure ends up with a different and more effective type of cure—from Commitment, Understanding, Resources and Empowerment as seen in Table 2.7.

**Table 2.7** A “cure” pain patients can administer to themselves

C—Commitment. The engine behind the desire to want to get better
U—Understanding. Learn about pain conditions and management options
R—Resources. Primary care physicians, physical and occupational therapists, psychologists, and others
E—Empowerment. Being a team member and co-decision maker in treatments

When it comes to overcoming chronic pain, patients can be like caterpillars: there is nothing initially to indicate there is a butterfly in the making. Pain patients can also be thought of as seeds and we clinicians are the gardeners. Every seed or acorn has an internal compass that tells it when it has the ideal conditions in which to germinate. Until the seed senses that it is enveloped with the right moisture and soil nutrients, air temperature, and amount of sunlight, nothing can make it to sprout and it may be dormant for years. However, when the right soil, air and weather conditions are present, practically nothing can *stop* the seed from germinating and turn into the plant or tree it was programmed to become (Table 2.8).

**Table 2.8** Main points of this chapter

Both patients and physicians lack knowledge about chronic pain
Chronic pain is not just biomedical it is biopsychosocial
Multidisciplinary care is more effective than unimodal treatments with chronic pain
Acute and chronic pain require different treatment approaches
Overuse of diagnostic imagery creates false positives and patient stress
The attitude of the patient is the key determinant of a positive pain outcome getting off

*Getting off on the right foot with your chronic pain patient calls for skills that many of us do not use when we are treating patients with acute conditions. Chapter 6, Treating the Chronic Pain Patient, Chap. 9, Common Pain Problems, Low Back Pain and Chap. 10, Common Pain Problems, Complex Regional Pain Syndrome, Myofascial Syndrome, and Fibromyalgia address treatment of your chronic pain patient in depth.*

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<http://www.springer.com/978-3-319-20322-5>

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Vasudevan, S.

2015, XXV, 228 p. 6 illus.,

ISBN: 978-3-319-20322-5